

What is claimed is:

1. A surface mount flipchip capacitor comprising:

a wire having opposite first and second end surfaces and upper and lower face surfaces;
a conductive powder element electrically connected to the wire and covering a portion of
5 the wire upper face surface;

insulative material surrounding at least a portion of the conductive powder element and a
portion of the wire upper face surface;

a first terminal formed by a first body of conductive material disposed to the first end
surface of the wire and a portion of the insulating material; and

10 a second terminal formed by a second body of conductive material disposed over and being
electrically connected to the upper end of the conductive powder element.

2. The surface mount flipchip capacitor of claim 1 wherein the first terminal is an
anode end and the second terminal is a cathode end.

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3. The surface mount flipchip capacitor of claim 1 wherein the conductive powder
element is made of powder.

4. The surface mount flipchip capacitor of claim 3 wherein the powder is from the
20 group consisting of: Ta, Nb, Hf, Zr, Ti, V, W, Be, and Al.

5. The surface mount flipchip capacitor of claim 3 wherein the powder is a substrate
of a metal from the group consisting of: Ta, Nb, Hf, Zr, Ti, V, W, Be, and Al.

25 6. The surface mount flipchip capacitor of claim 3 wherein the powder has been
electrophoretically deposited upon the wire.

7. The surface mount flipchip capacitor of claim 1 wherein the conductive powder
element has a density between 3-8 g/cc.

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8. The surface mount flipchip capacitor of claim 1 wherein the conductive powder element has a capacitance-voltage between 10 CV and 150 KCV.

9. The surface mount flipchip capacitor of claim 1 wherein the wire is a
5 parallelepiped.

10. A method of creating a surface mount flipchip capacitor comprising:
providing a wire having opposite first and second end surfaces and upper and lower face
surfaces;

10 forming a conductive powder element upon the wire covering a portion of the face surface,
the conductive powder element having a cathode end, an anode end, and conductive
powder element sides extending between the anode and cathode ends;

applying an insulation material over the conductive powder element to create a layer of the
insulation material exterior of, and in covering relation over the cathode end and the
15 conductive powder element sides, whereby the conductive wire extends below and
has a protruding wire portion extending beyond an exterior surface of the layer of
insulation material;

applying an anode layer of conductive material over the wire first end and a portion of the
exterior surface of the insulation material so that the anode layer of conductive
20 material is in electrical contact with and covers the wire end, whereby electrical
continuity is achieved from the anode end of the conductive powder element,
through the wire to the anode layer of conductive material;

applying a cathode layer of conductive material over at least a portion of the cathode end
of the conductive powder element approximately level with the anode layer of
25 conductive material and in electrical contact with, the cathode end of the conductive
powder element.

11. The method of claim 10 further comprising the step arranging the wire for
acceptance into a reel to reel process.

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12. The method of claim 11 further comprising the step masking the foil for application of a powder onto the wire.

13. The method of claim 12 further comprising electrophoretically depositing the
5 powder upon the wire.

14. The method of claim 13 wherein the powder is from the group consisting of: Ta, Nb, Hf, Zr, Ti, V, W, Be, and Al.

10 15. The method of claim 13 wherein the powder is a substrate of a metal from the group consisting of: Ta, Nb, Hf, Zr, Ti, V, W, Be, and Al.

16. The method of claim 13 wherein the conductive powder element has a density between 3-8 g/cc.

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17. The method of claim 13 wherein the conductive powder element has a capacitance-voltage between 10 CV and 150 KCV.

18. The method of claim 10 further comprising the step opening an area through the
20 insulation material to permit the cathode layer of conductive material to contact the cathode end of the conductive powder element.